

Appendix C

Winter Fuels Explanatory Notes

Note 1. Form EIA-807 Propane Survey

The Form EIA-807, "Propane Telephone Survey," was implemented in April 1990 as the result of the 1989 propane supply disruption. The hardships experienced by propane users during the December 1989 cold-snap in the Northeast and Mid-Continent areas made the need for timely supply information imperative. During 1990, propane data was collected and provided to Congress and others upon request. Because of the overwhelming demand for continuous monitoring of propane supply, the *Winter Fuels Report* was implemented in September 1990. Production, imports, and stocks data are collected weekly during the heating season (October - March). During the non-heating season (April -September) data are collected on end-of-month stocks only and are also published in the *Weekly Petroleum Status Report*. These data are released electronically via the Internet and on EIA's electronic bulletin board (EPUB) at 5:00 pm Wednesday.

Respondent Frame

During the non-heating season, the Form EIA-807, "Propane Telephone Survey," collects data on end-of-month stocks of propane. The sample of companies that report monthly is selected from the universe of respondents that report on the monthly surveys listed below:

Form Number	Name
EIA-810	<i>Monthly Refinery Report</i>
EIA-811	<i>Monthly Bulk Terminal Report</i>
EIA-812	<i>Monthly Product Pipeline Report</i>
EIA-816	<i>Monthly Natural Gas Liquids Report</i>

Sampling

The sampling procedure used for the EIA-807 is the cut-off method. In the cut-off method, facilities are ranked from largest to smallest on the basis of quantities reported for propane production, imports, and stocks. Companies are chosen for the sample beginning with the largest and adding companies until the total sample covers about 90 percent of the total for each item and each geographic region (Petroleum Administration for Defense Districts I (IA, IB, IC), II and III) for which data are published. A bench mark factor is used to capture the remaining 10 percent of the propane industry.

The sample frame for the EIA-807 is re-evaluated on an annual basis to assure 90 percent coverage of the total for each item collected and each geographic region. However, when necessary the sample frame is updated more frequently.

Collection Methods

Data are collected by telephone or facsimile. No written confirmation of the data submission is necessary. For monthly data collections, telephone calls to respondents start on the third working day following the end of the report period.

Resubmissions

Resubmissions are any changes to the originally submitted data that were either requested by the EIA or initiated by the respondent. A determination is made on whether to process the resubmissions based on the magnitude of the revision. Cell entries on publication tables are marked with an "R" for revised.

Estimation and Imputation

After the company reports have been checked and entered into the EIA-807 data base, imputation is done for companies which have not yet responded. The imputed values are equal to the latest reported data for a particular reporting unit. Response rates are over 90 percent so very little imputation is done.

After the data files have been edited and corrected, aggregation is done for each geographic region. Estimation factors, derived similarly to those described on page 31, are then applied to each cell to generate published data.

Response Rate

The response rate is generally 95 to 100 percent. Chronic nonrespondents and late filing respondents are contacted by telephone and reminded of their requirement to report. Nearly all of the major companies report on time. The nonresponse rate for the published estimate is usually between 1 percent and 2 percent.

Propane Figures

The national and PADD level inventory (stocks) graphs include features to assist in comparing current inventory levels with past inventory levels and with judgements of critical levels. Figures C7 through C10 provide the reader with actual inventory data compared to an "average range" for the most recent three-year period running from January through December or from July through June. The ranges also reflect seasonal variation for the past seven years. See page 32 for a further discussion.

Note 2. Prices

The residential No. 2 heating oil and propane prices (excluding taxes) for a given State are based on the results of telephone surveys of a sample of marketers and refiners. Data are collected by State Energy Offices under the Energy Information Administration (EIA) State Heating Oil and Propane Program.

Sampling Methodology and Estimation Procedures

To estimate aggregate propane and No. 2 heating oil price data for a State, the sample weight and volume sales data were applied to the reported price, summed and divided by the sum of the weighted volume:

$$\sum_{j=1}^s \sum_{i=1}^{n_j} w_{ij} v_{ij} p_{ij} / \sum_{j=1}^s \sum_{i=1}^{n_j} w_{ij} v_{ij}$$

where w = sample weight, v = volume, p = price, i = respondent, n_j = sample size of stratum j , and s = number of strata, to obtain a volume weighted price.

The volume used for No. 2 heating oil and propane is the company's residential sales volume as reported on the EIA-863 "Petroleum Product Sales Identification Survey."

These fixed volume weights indicate the relative importance of the individual companies according to the size of their sales. Therefore, changes in the average price across time reflect only the change in the price being offered by the company, and not changes in the amounts sold. Price indexes constructed using fixed volumes, such as these annual sales, are known as Laspeyres Indexes. The alternative method of weighting, current weights, would require each company to report the number of gallons sold at the reported price each pricing period. This method is more burdensome on the companies and reflects prices over a period of time as compared to a point in time. Therefore, the calculation of average prices tends to lag behind the reference period. Indexes constructed from current period weights are known as Paasche Indexes.

Both methods of weighting are correct; they do, however, vary when current weights are changing. It has been argued that during periods of change, the Laspeyres method has a tendency to overestimate price changes, while the Paasche method tends to underestimate price changes.

In this survey, it is expected that the relative change in volumes monthly is small. Residential sales are not bulk in nature and do not tend to reflect discounts on price for large volume purchases. Absolute changes in volume within a year's time would more likely reflect demand and be consistent across companies within a geographical area.

Residential No. 2 Heating Oil

For the No. 2 heating oil price data, a sample design similar to that used for the EIA Form EIA-782B, "Resellers'/Retailers' Monthly Petroleum Product Sales Report," sample design was used. The sampling frame was an extract of approximately 11,000 companies from the Form EIA-863, "Petroleum Product Sales Survey," conducted in 1992 and containing 1991 sales volume information. A one-way stratified sample design using No. 2 residential distillate frame sales volumes by State, for each of the 24 States to be sampled, was used. Stratum boundaries were determined by the Dalenius-Hodges procedure. Sample weights were calculated as the inverse of the probability (N/n). Certainty strata were established based on sales volumes and the number of States in which the company has sales. The expected price coefficient of variation is one to two percent.

Residential Propane

Since no volume sales information existed to predetermine the volume sales of propane dealers, two strata for propane dealers were used. A certainty stratum of the known, large, multi-State dealers was created. These companies were identified using establishment lists obtained in deriving the frame. All other dealers were in a second stratum and a random sample from this stratum was selected. Sample weights were calculated as the inverse of the probability (N/n). The name and address list sampling frame was constructed by first extracting from the Form

EIA-863, "Petroleum Product Sales Identification Survey," companies who marked the box on the survey indicating they sell propane. This was augmented by companies on the Office of Oil and Gas Master File who have the words propane or liquefied petroleum gas (LPG) in their name. In addition, companies who file the Form EIA-782A, "Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report," and report retail propane, or the Form EIA-782C, "Monthly Report of Petroleum Products Sold into States for Consumption," and report propane, as well as companies that were active on the Form EIA-174, "Liquefied Petroleum Gas Survey," prior to its discontinuance, were included.

After unduplicating these companies, the initial frame file contained approximately 5,100 companies. Additional companies were obtained from an extract of a current Dun and Bradstreet file of SIC code 5984(9903), primary and secondary retail propane dealers, containing 3,283 names and addresses. Removal of duplicates within this file and between it and the initial frame file was performed using tailored automated match programs with manual review, and resulted in approximately 1,000 potential adds to the initial file. Similarly, additional names and addresses were furnished by industry associations and journals, and by State Energy Offices, yielding another 7,429 names. Again, removal of duplicates through the match programs yielded an approximate potential add of 900 companies. Another 800 companies were identified as residing on the Master File but not previously selected as potential propane sellers. Further matching, merging and unduplicating reduced the final total frame count to approximately 6,000 companies. Reseller/retailer propane price data were unavailable to calculate a target coefficient of variation. However, it was expected that residential propane price variances were similar to heating oil. Increases in variances were expected as a result of lack of detailed stratification, but were only expected to reach three to four percent.

Revision Error

Numbers may be revised in the publication based on data received late or receipt of revised data. Numbers are published as preliminary and final. The difference between preliminary and final data is called the revision error.

Response Rate

Response rates are generally 95 to 100 percent.

Note 3. Confidentiality of Information

Data on this form will be kept confidential and not disclosed to the public to the extent it satisfies the criteria for exemption under the Freedom of Information Act (FOIA), 5 U.S.C. section 552, and others regulations. It may be released to the Department of Justice or to any other Federal Agency for official use which may include enforcement of Federal Law. The information contained on this form may also be made available to any Committee of Congress, the General Accounting Office, or other Congressional agencies authorized by law to receive such information. A court of competent jurisdiction may obtain this information in response to an order.